

CLEAN clinKER by calcium
looping for low-CO₂ cement



CLEANKER Newsletter 1

April 2018

Dear reader,

the Horizon2020 CLEANKER project addresses CO₂ capture from cement production to reduce CO₂ emissions from cement industry with CO₂ capture efficiency target over 90%.

You can visit the CLEANKER website (www.cleanker.eu) to learn more about our project and follow us on *twitter* - @CLEANKER_H2020 and *Facebook* – Cleanker project @cleanker to be updated on CLEANKER news.

Enjoy!

Martina Fantini, CLEANKER coordinator

Project Kick-off – Piacenza, 18-19 October 2017

CLEANKER (G.A. 764816) was launched on 1 October 2017 by a consortium encompassing 13 partners covering 5 EU member states plus Switzerland and China. The project consortium is led by LEAP scarl (Laboratorio Energia Ambiente Piacenza).

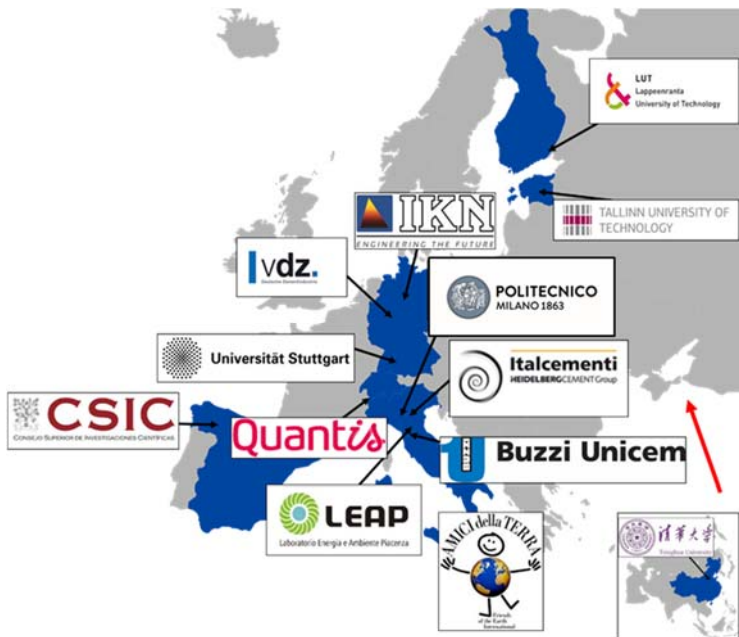


Figure 1: CLEANKER consortium: **RESEARCH CENTRES** (LEAP/Italy, CSIC/Spain, VDZ/Germany), **REPRESENTATIVES FROM THE ACADEMIA** (Politecnico di Milano/Italy, Tallinn University of Technology/Estonia, Lappeenranta University of Technology/Finland, University of Stuttgart/Germany, Tsinghua University/China), **SMALL AND MEDIUM ENTERPRISE (SME)** (Quantis/Switzerland), **TECHNOLOGY PROVIDER** (IKN/Germany), **END USERS** (Buzzi Unicem /Italy, Italcementi-Hidelbergcement Group/Italy), **ENVIRONMENTAL ORGANIZATION** (Amici della Terra/Italy)



Figure 2: Participants of the kick-off meeting held in Piacenza Campus of Politecnico di Milano – Italy

The ultimate objective of the CLEANKER project is demonstrating the applicability of the Calcium Looping (CaL) technology to the cement production process, with the usage of entrained flow reactors. A complete

demonstration system will be installed by the 1300 kton/year cement plant, operated by Buzzi Unicem in Vernasca (Piacenza, Italy). During the kick-off meeting a visit to the plant was organized (Day 2).



Figure 3: Kick-off meeting, visit to Buzzi Unicem cement plant - Vernasca, Piacenza, Italy

Innovation in Industrial Carbon Capture Conference – Liège, 7-8 February 2018

LEILAC (Low Emissions Intensity Lime And Cement, G.A. 654465) Consortium (www.project-leilac.eu/), has organized “Innovation in Industrial Carbon Capture Conference” aiming at bringing together the latest knowledge in the industrial application of carbon capture technology, creating a platform to share knowledge and ideas with fellow experts, stakeholders and industry leaders.

CLEANKER members were invited to present the project during the poster session on Day 2.

Public Event – Rome, 28 March 2018

Amici della Terra, one of the CLEANKER partners, has organized the first public event to present the CLEANKER project to general public. The event took place on 28th of March in the morning, in the “Sala del Cristallo – Hotel Nazionale – Piazza Montecitorio – Roma”.

Chairlady: **Monica Tommasi** – Amici della Terra.

Speakers:

- **Stefano Consonni** – LEAP President and full professor at Politecnico di Milano: “CO₂ industrial emissions and Storage and Utilization strategies”;
- **Sebastiano Serra** – Technical Secretary of *Ministero dell'ambiente e della tutela del territorio e del mare*: “The vision of the Italian government on climate change”;
- **Marcello Capra** – SET Plan director for *Ministero dello Sviluppo Economico*: “EU strategies for CCS in Europe”;
- **Giovanni Cinti** – Italcementi-HeidelbergCement Group consultant: “The role played by the cement sector”;
- **Fulvio Canonico** – Head of R&D Buzzi Unicem Laboratory: “CLEANKER project: objectives and expected results”.



Figure 4: Sala del Cristallo, Rome – Pics

Where we are

Six deliverables have already been concluded in CLEANKER and two will be available by the end of the month. Abstracts can be found on the CLEANKER webpage (www.cleanker.eu).

CLEANKER is now focused on concept design of the demonstrator (P&ID – Process and Instrumentation Diagram). Troubles both in terms of how to design and how to the design given the budget constraints, were brilliantly overcome thanks to the expertise of the team and their collaboration. Perfectly on time, the engineering will be defined in the coming weeks. Contacts with main supplier (oxygen, special equipment etc..) are already established.

Coming events

CO₂GeoNet Open Forum

CO₂GeoNet (www.co2geonet.com), the European scientific body on CO₂ geological storage, is organizing an Open Forum on “Growing CCS for a sustainable future – Linking local actions for a global solution” which will take place in San Servolo Island (Venice) on 24-25 of April, 2018 (<http://conference2018.co2geonet.com/>). Pre- and Post-Open Forum workshops are organised on 23 and 26 April 2018.

The event will offer a unique opportunity to meet and directly interact with Europe’s largest group of researchers on CCS, attracting a wide range of stakeholders including representatives from the EC, industry, regulators, public authorities, NGOs and research community.

The CLEANKER poster will be presented on the 25th of April.

ECRA/CEMCAP/CLEANKER workshop

On 17 October 2018 ECRA, CEMCAP and CLEANKER will hold a joint workshop in Brussels to discuss the technological and economic framework for the application of carbon capture technologies in the cement industry.

CEMCAP (G.A. 641185) is a project funded by the EU’s Horizon 2020 programme addressing CO₂ capture from cement production through the demonstration of different CO₂ capture technologies in an industrially relevant environment (TRL 6) based on the previous work of ECRA and Norcem. ECRA is involved as an industrial advisory group to give guidance to the CEMCAP research consortium and communicate the results within the European cement industry. CEMCAP started in 2015 and will finalize its work in October 2018. The conclusions from CEMCAP’s experiments and research will be highlighted in the workshop. CLEANKER is a project that started in 2017, also funded by EU’s Horizon 2020 program. It addresses CO₂ capture from cement production by demonstrating calcium looping (CaL) technology in the cement plant (TRL 7). Further presentations will encompass options for direct separation capture technology and carbon capture and storage/utilization (CCS, CCU). Participation is free.

More details and instructions on how to register will be available in due course on the following websites: www.ecra-online.org, www.sintef.no/cemcap, www.cleanker.eu



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n. 764816.